

ABSTRACT

**METHOD AND APPARATUS FOR BAND-TO-BAND
TRANSLATION IN A WIRELESS COMMUNICATIONS SYSTEM**

A translator for translating RF signals from one wireless frequency
5 band to another wireless frequency band in a wireless communications
system including a base station, a remote antenna, and remote customer
premises equipment. The base station is an existing legacy base station,
such as a PCS base station, modified to include a translator for translating
RF signals in a first wireless frequency band to RF signals in a second
10 wireless frequency band. The base station transmits RF signals in the
second band to a remote antenna, which includes a translator for
translating the RF signals in the second band back to RF signals in the
first band. The remote antenna may be located in a building or
neighborhood with a coverage area as small as a picocell. A CPE (such
15 as a mobile phone) communicates with the antenna in a first wireless
frequency band, and the antenna communicates with the base station in a
second wireless frequency band.

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